

Steps to Inquiry

Planning Our Investigation

Step 1: Observing and Questioning

Observe

See Smell Hear Touch Taste



This is our control.

Wonder ...



How can the questions be answered?
(Question Sort)

Steps to Inquiry

Planning Our Investigation

Step 2(a): **What could we measure or observe about the object, or event?**

- Brainstorm *(Place sticky notes of the same colour in the square below.)*

Measure / Observe

Step 2(b): **What could we change or vary about the object or the event that may affect what we could measure or observe?**

- Brainstorm *(Place sticky notes of a new colour in the square below.)*

Variables

Steps to Inquiry

Planning Our Investigation

Step 3 (a): **What will we change?**

One variable we will change:

Changed
Variable

(Place a sticky note from Step 2(b) here)



We will measure or observe this result:

Measure /
Observe

(Place a sticky note from Step 2(a) here)

Step 3 (b): **What will we not change?**

Variables we will NOT change:

What conditions will be held constant so it is a fair test? *Place remaining sticky notes from Step 2(b) here.*

Unchanged Variables

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Planning Our Investigation

Step 4: What is the question we want to explore?

If we change

Changed
Variable

what will happen to

Measure/
Observe

compared to our control?

Step 5: What is our prediction?

State how we will change the variable and predict the outcome.

We predict that

We think this will happen because

Steps to Inquiry

Plan, Perform & Record

Step 6: How will we test our prediction?

Our Test Set-Up

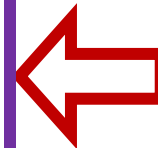
Here's how we will change the variable...



Changed Variable

Our Control Set-Up

Here's how we won't change this variable...



(What will we do?
How will we change the variable?)

(What will we do?
How will we keep the variable the same?)

Our Test Steps:

Our Control Steps:



Steps to Inquiry

Plan, Perform & Record

Step 7a): **How will we record our observations and/or measurements?**

Sample Chart for Recording Measurements / Observations

- Modify this chart to suit the investigation or design your own. (Specify units if appropriate.)

What changes did we make to the changed variable?

What did we observe and/or measure?

Steps to Inquiry

Plan, Perform & Record

Step 7b): Equipment Set-Up & Check

Have we

- ☒ collected all of the materials?
- ☒ organized and/or set-up our equipment properly?
- ☒ reviewed our procedure and recording chart?
- ☒ made changes where necessary?

Step 7c): Perform Experiment and Collect the Data

Follow the procedure to complete the experiment.
Record the data in your chart. (See Step 7a).

Steps to Inquiry

Analyze & Interpret

Step 8: Graphing Results

What type of graph best suits my data?

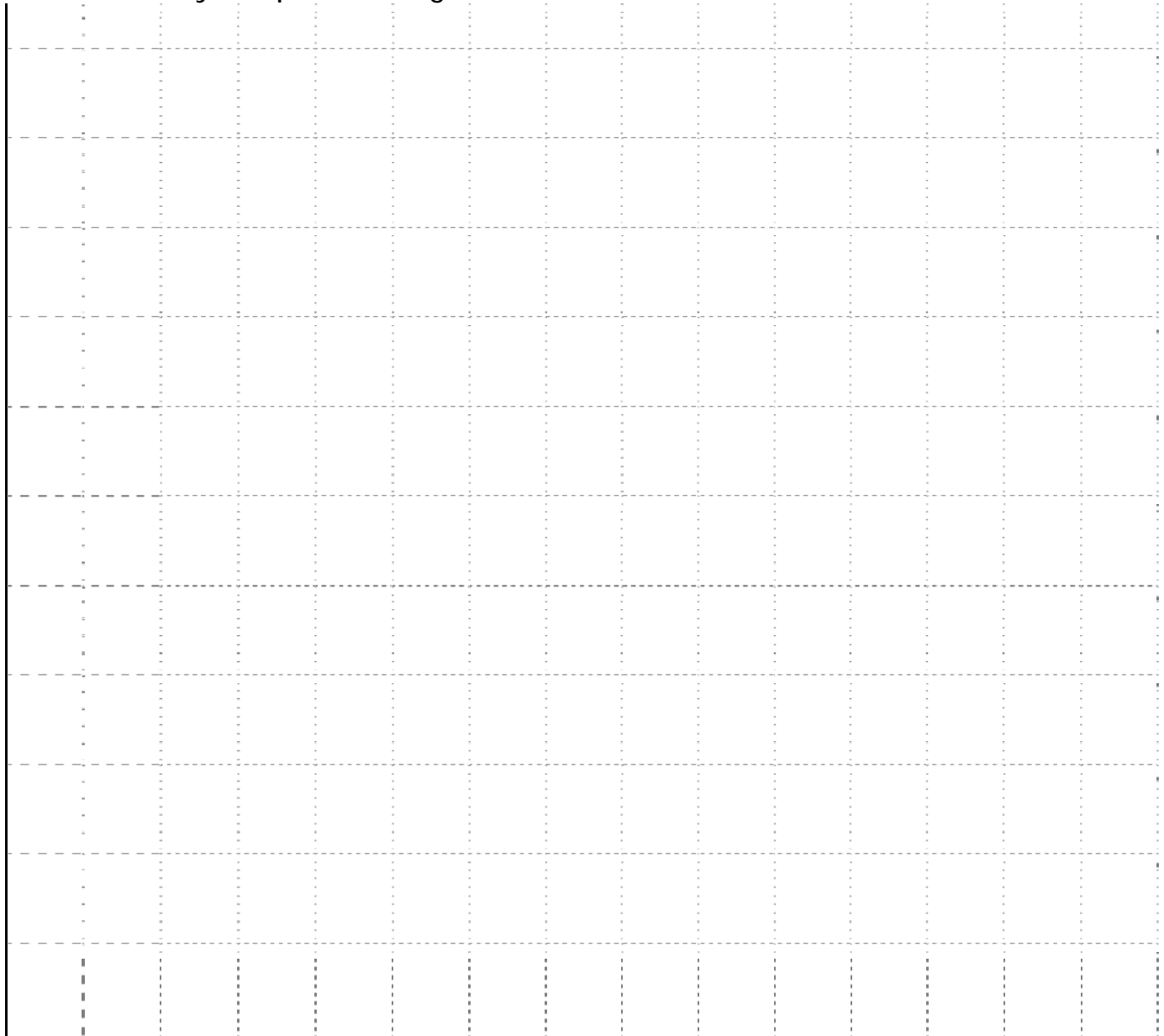
Bar Graph

Line Graph

Other

My Graph Showing _____

What We Observed...



What We Changed...

Remember to label axes and add scales appropriately.

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Process Skills: Beginning → Exploring → Emerging → Competent → Proficient

Steps to Inquiry

Analyze & Interpret

Step 9: Finding Patterns and Relationships in Results

From the graph/table:

The highest value/number	The lowest value/number	Values/numbers that are equal or constant

The graph/table shows that when we change _____, the
(Changed variable)

(Describe what happens to what we measured/observed.)

We know this because:
(What is our evidence?)

Data from Senses	<p>When we observed _____</p> <p>We saw/heard/felt/smelled, _____</p> <p>_____</p> <p>_____</p>
Data from Measurements	<p>When we measured _____</p> <p>with _____, we found _____</p> <p>_____</p> <p>_____</p>

Steps to Inquiry Communicate

Refer to your prediction.

☒ The data does support my prediction.



The data does support my prediction because I predicted that _____ change in the changed variable

would make _____ the change in what I measured/observed.

I thought _____ would cause the changed variable

this change because _____

_____.

☒ The data does NOT support my prediction.



The data does NOT support my prediction because I predicted that _____ change in the changed variable

would make _____ the change in what I measured/observed.

I thought _____ would cause this change because _____

_____.

Now I know that _____ doesn't the changed variable

have that effect.

Make an inference:

I think this happened because _____

_____.

Steps to Inquiry Communicate

Step 10 b): Other Considerations

1. If you had data that was different from other groups (or was inconclusive or inconsistent), what might have caused these results?

2. How might have you improved your investigation?

3. What new/additional questions do you now want to investigate?